



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,158	05/10/2001	Atsushi Yamaguchi	109500	5938
25944	7590	06/24/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			RENNER, CRAIG A	
			ART UNIT	PAPER NUMBER
			2652	

DATE MAILED: 06/24/2004

23

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/853,158

Applicant(s)

YAMAGUCHI ET AL.

Examiner

Craig A. Renner

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 April 2004 has been entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Matono et al. (US 5,739,991).

Matono teaches a thin-film magnetic head comprising a medium facing surface (87) that faces toward a recording medium (lines 64-67 in column 3, for instance); a read head including a magnetoresistive element (5) and a first shield layer (3) and a second shield layer (81) for shielding the magnetoresistive element, the first and second

Art Unit: 2652

shield layers having portions that are located in regions on a side of the medium facing surface and opposed to each other (as shown in FIG. 8, for instance), the magnetoresistive element being placed between the portions of the shield layers (as shown in FIG. 8, for instance); and a write head including a first magnetic layer (82) and a second magnetic layer (10) that are magnetically coupled to each other and include magnetic pole portions opposed to each other and placed in regions on a side of the medium facing surface (as shown in FIG. 14, for instance), each of the magnetic layers including at least one layer (as shown in FIG. 14, for instance); a gap layer (9) provided between the pole portions of the first and second magnetic layers; and a thin-film coil (12) at least part of which is placed between the first and second magnetic layers (as shown in FIG. 14, for instance), the at least part of the coil being insulated from the first and second magnetic layers (as shown in FIG. 14, for instance); wherein the read head and the write head are placed such that one of the shield layers of the read head and one of the magnetic layers of the write head are opposed to each other (as shown in FIGS. 8 and 14, for instance); the thin-film magnetic head further comprising a magnetism intercepting layer (83) provided between the one of the shield layers and the one of the magnetic layers (as shown in FIGS. 8 and 14, for instance), and extending to a back gap region (as shown in FIG. 14, for instance), the magnetism intercepting layer having a thickness of 0.2 μm or greater (lines 21-22 in column 6 and lines 31-32 in column 7, for instance) and made of a nonmagnetic metal material that is capable of being formed through plating (lines 25-27 in column 6, for instance, i.e., at least one of "Ta" and "Ti", for instance, is capable of being formed through plating), wherein the one

Art Unit: 2652

of the magnetic layers of the write head and the magnetism intercepting layer have substantially the same widths at the medium facing surface (as shown in FIG. 8, for instance) and are capable of being formed using a single frame (as shown in FIG. 8, for instance) [as per claim 1]; wherein the nonmagnetic metal material has a Vickers hardness of 400 or greater (lines 25-27 in column 6, for instance, i.e., each of "Ta" and "Ti", for instance, has a Vickers hardness of 400 or greater, specifically "Ti" is approximately 970 and "Ta" is approximately 873) [as per claim 2]; and wherein the nonmagnetic metal material is made of a single element that is not used for the one of the shield layers and the one of the magnetic layers (lines 25-27 in column 6, for instance, taken in conjunction with line 58 in column 3, for instance, i.e., each of "Ta" and "Ti", for instance, is not used in "CoZr" or "NiFe") [as per claim 3]. As the claims are directed to a "thin-film magnetic head", per se, the method limitations appearing in lines 21 and 24 of independent claim 1 can only be accorded weight to the extent that they affect the structure of the completed thin-film magnetic head. Note that "[d]etermination of patentability in 'product-by-process' claims is based on product itself, even though such claims are limited and defined by process [i.e., "formed through plating" and "formed using a single frame", for instance], and thus product in such claim is unpatentable if it is the same as, or obvious form, product of prior art, even if prior product was made by a different process", *In re Thorpe, et al.*, 227 USPQ 964 (CAFC 1985). Furthermore, note that a "[p]roduct-by-process claim, although reciting subject matter of claim in terms of how it is made [i.e., "formed through plating" and "formed using a single frame", for instance], is still product claim; it is patentability of product

Art Unit: 2652

claimed and not recited process steps that must be established, in spite of fact that claim may recite only process limitations", *In re Hirao and Sato*, 190 USPQ 685 (CCPA 1976).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matono et al. (US 5,739,991).

Matono teaches the thin-film magnetic head as detailed in paragraph 3, supra. Matono, however, remains silent as to the nonmagnetic metal magnetism intercepting layer material being "platinum." Matono does however teach that the specific magnetism intercepting layer materials disclosed are merely provided "for example" (lines 25-27 in column 6, for instance).

Official notice is taken of the fact that platinum is a notoriously old and well known nonmagnetic metal magnetism intercepting layer material in the thin-film magnetic head art. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the nonmagnetic metal magnetism intercepting layer material of Matono be platinum. The rationale is as follows:

One of ordinary skill in the art would have been motivated to have had the nonmagnetic metal magnetism intercepting layer material of Matono be platinum since Matono suggests that other magnetism intercepting layer materials may be used and since platinum is a notoriously old and well known nonmagnetic metal magnetism intercepting layer material in the thin-film magnetic head art. Selecting a known material on the basis of its suitability for the intended use is within the level of ordinary skill in the art, *In re Leshin*, 125 USPQ 416 (CCPA 1960).

Response to Arguments

6. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

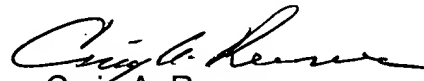
Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (703) 308-0559. The examiner can normally be reached on Tuesday-Friday 7:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2652

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Craig A. Renner
Primary Examiner
Art Unit 2652

CAR